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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,399	02/08/2006	Bogdan Serban	271884US2PCT	4409
22850	7590	12/17/2008	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			LEE JR, KENNETH B	
			ART UNIT	PAPER NUMBER
			2629	
			NOTIFICATION DATE	DELIVERY MODE
			12/17/2008	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/535,399	SERBAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	KENNETH B. LEE JR	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 03 November 2008.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 17-37 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 17-37 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 17-22, 30, 31, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caullet et al., EP0266229, hereinafter referred to as Caullet, in view of Crumley et al., US Patent #4,429,301, hereinafter referred to as Crumley.

Referring to claim 17, Caullet discloses a data input device (keyboard) including a plurality of keys, wherein a unidirectional position detector (Fig. 1) is associated with each line of keys and each unidirectional position detector includes a first input connection (Fig. 1, item 1), a second input connection (Fig. 1, item 2), and an output connection (Fig. 1, item 8); and the first input connection is connected to a first terminal (Fig. 1, item A) of the data input device and the second input connection is connected to a second terminal (Fig. 1, item B) of the data input device.

Caullet fails to disclose that the keys are arranged in at least two lines and that the output connections in the unidirectional position detectors are connected, at various points, to a first ohmic resistor; and **a plurality of unidirectional position detectors, each unidirectional position detector being associated with a respective row of keys.**

Crumley discloses a plurality of unidirectional position detectors on an additional axis (Nx or Ny) that provide the same advantages and features of the present application (Crumley discloses a plurality of unidirectional position detectors (switchable connections or switches 23 that determine x and y positions by the closed switches). These switches are associated with each row in the matrix (applicant's keys) (fig. 1, item 23; column 1, line 60 - column 2, line 13).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Crumley to modify Caullet.

The motivation for doing so would have been to provide a simpler method for decoding switch arrays (column 1, lines 46-48).

Therefore, it would have been obvious to combine Crumley with Caullet in order to obtain the invention as specified in claim 1.

Regarding claim 18, Crumley discloses a resistive ink and conductive ink that could be used as a continuous resistive element running parallel and perpendicular to the conductors (column 2, lines 48-60; column 3, lines 5-10; Fig. 2).

Regarding claim 19, Crumley discloses a series layout of a plurality of discrete resistors (column 1, lines 34-36 and 65-68).

Regarding claim 20, Crumley discloses switches being connected to the first and second conductors (abstract; column 1, lines 32-40).

Regarding claim 21, Crumley discloses wherein the switches are connected at various locations to the strip of resistive material (column 1, lines 34-43 and column 2, lines 1-14).

Regarding claim 22, Crumley discloses a series layout of a plurality of discrete resistors (column 1, lines 34-36)).

Regarding claims 30 and 31, Crumley discloses a series layout of resistors and located in parallel rows (Fig. 1) and switching means (column 2, lines 1-14).

Regarding claim 36, Caullet discloses position detectors that are operated by a single control element (Fig. 1).

3. Claims 23-29, 32-35, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caullet in view of Crumley as applied to claim 17 above, and further in view of Eventoff, US Patent #4,810,992.

Regarding claim 23, Crumley discloses a voltage divider (Fig. 1) and resistors extending along a row of a switch array. Crumley also discloses conducting lines extending from the resistors that are arranged at a certain distance from one another (Fig. 1).

Crumley fails to disclose a comb-like conductor and an activation layer made of a semiconducting material.

Eventoff discloses a plurality of conductors extending from each resistor ply which are spaced apart and interleaved with a plurality of conductors extending from a third terminal that include a pressure sensitive conductive layer on each side of a base ply (abstract, column 1, line 19 - column 2, line 47).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Eventoff to modify Caullet and Crumley.

The motivation for doing so would have been to provide spatial location sensing with the ability to sense pressure (column 1, lines 40-50).

Therefore, it would have been obvious to combine Eventoff with Caullet and Crumley to obtain the invention as specified in claim 23.

Regarding claim 24, Eventoff discloses a non-linear resistive gradient (column 4, lines 66-68).

Regarding claim 25, it has limitations similar to those of claim 23 and therefore is rejected on the same grounds.

Regarding claim 26, it has limitations similar to those of claim 24 and therefore is rejected on the same grounds.

Regarding claim 27, Eventoff discloses a third terminal and means for electrically interconnecting the third terminal to a selected location along the electrical contact surface of the resistor ply and a switching means that is interconnected to provide a substantially zero voltage drop between terminals (column 1, line 64 – column 2, line 11).

Regarding claims 28 and 29, they have limitations similar to those of claim 27 and therefore are rejected on the same grounds.

Regarding claim 32, it has limitations similar to those of claim 30 and therefore is rejected on the same grounds.

Regarding claim 33, Eventoff discloses actuation of the switches using a single control element (Fig. 9).

Regarding claim 34, Eventoff discloses sensors that are disposed a distance apart and are actuated by a single control element (column 1, lines 19-31).

Regarding claim 35, Crumley discloses determining position of closed switches in matrix based on equations (voltage taps on first end and second end have different equations which result in different locations) (page 3).

Regarding claim 37, Eventoff discloses switches connected on one end and a same resistor (Fig. 9).

### ***Response to Arguments***

4. Applicant's arguments filed 11/03/2008 have been fully considered but they are not persuasive. Applicant argues that prior art fails to disclose **a plurality of unidirectional position detectors, each unidirectional position detector being associated with a respective row of keys**. Examiner, respectfully, disagrees.

Crumley discloses a plurality of unidirectional position detectors (switchable connections or switches 23 that determine x and y positions by the closed switches). These switches are associated with each row in the matrix (applicant's keys) (fig. 1, item 23; column 1, line 60 - column 2, line 13). Applicant also argues the combination of Caullet and Crumley. Examiner, respectfully, disagrees. As applicant stated, these inventions belong to the same field and serve the same purpose. One of ordinary skill in the art would have combined these teachings because Crumley provides the obvious advantage of providing a simpler method of decoding the output of a large crossbar switch array.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH B. LEE JR whose telephone number is (571)270-3147. The examiner can normally be reached on Mon. - Fri. 7:30AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bipin Shalwala/  
Supervisory Patent Examiner, Art Unit 2629

Kenneth B. Lee Jr.  
Examiner  
Art Unit 2629

KBL